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We claim:-

1. A method for cooling an internal combustion engine, a cooling liquid which comprises nonionic corrosion inhibitors being allowed to circulate in a cooling circulation in thermal contact with the internal combustion engine, and the cooling liquid being at least intermittently deionized.
- 10 2. A method as claimed in claim 2, wherein the cooling liquid used is an aqueous coolant composition which comprises from 10 to 90% by weight of a coolant concentrate based on alkylene glycols or derivatives thereof or on glycerol, the coolant concentrate containing from 0.05 to 10% by weight, based on the total amount of concentrate, of one or more carboxamides and/or sulfonamides, if required in addition to further nonionic components.
- 20 3. A method as claimed in either of claims 1 and 2, wherein the cooling liquid is deionized by means of at least one ion exchanger.
4. A method as claimed in any of claims 1 to 3, wherein the cooling liquid is deionized by means of a liquid deionizing agent.
- 25 5. A method as claimed in any of claims 1 to 4, wherein the cooling liquid is deionized electrochemically.
- 30 6. An apparatus for cooling an internal combustion engine, comprising a cooling circulation (14) which is in thermal contact with the internal combustion engine (11) at least in a section, wherein at least one deionizing means (28) for cooling liquid is arranged in the cooling circulation.
- 35 7. An apparatus as claimed in claim 6, wherein the deionizing means (28) comprises at least one ion exchanger, preferably a mixed-bed resin ion exchanger.
- 40 8. An apparatus as claimed in either of claims 6 and 7, wherein the deionizing means (28) is in the form of a contact cell in which a liquid deionizing agent can act on the cooling liquid.

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9. An apparatus as claimed in any of claims 6 to 8, wherein the deionizing means (28) comprises at least one electrodialysis cell.
- 5 10. An apparatus as claimed in claim 9, wherein the electrodialysis cell comprises an ion exchanger.
11. A liquid-cooled fuel-burning engine unit comprising at least one internal combustion engine (11) and at least one cooling circulation (14) for the internal combustion engine, wherein at least one deionizing means (28) is provided in the cooling circulation (14).

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Abstract

A process and an apparatus for cooling an internal combustion engine are described. In a cooling circulation (14) of the internal combustion engine (11), an aqueous nonionic coolant composition is used. In order to ensure long-lasting corrosion protection even for light metal components of the engine, for example components comprising magnesium or magnesium alloys, 10 which come into contact with the cooling liquid, the cooling circulation has at least one deionizing means (28), for example an ion exchanger, for the cooling liquid.